

REMARKS

After entry of this amendment, claims 1-62 are pending. In the present Office Action, claims 27-36 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1-36 were rejected under 35 U.S.C. § 102(e) as being anticipated by Bell et al., U.S. Patent No. 6,021,451 ("Bell"). Applicants respectfully traverse these rejections and request reconsideration.

Section 102 Rejection

Applicants respectfully submit that each of claims 1-36 recite combinations of features not taught or suggested in Bell. For example, claim 1 recites a combination of features including: "a first agent configured to generate a first signal, wherein said first signal is indicative, in a first state, that said first agent is available to participate in subsequent transactions, and wherein said first signal is indicative, in a second state, that said first agent is unavailable to participate in subsequent transactions; and a second agent coupled to receive said first signal, wherein said second agent is configured to initiate a first transaction for which said first agent is a participant responsive to said first signal being in said first state, and wherein said second agent is configured to initiate a second transaction for which said first agent is a non-participant responsive to said first signal being in said second state".

It is unclear what elements in Bell are alleged to be the first and second agent as recited in claim 1. The Office Action indicates reference numerals 130 and 140, respectively, in Fig. 2 of Bell. Various portions of columns 5-9 are then alleged to teach the above highlighted features. However, there is no reference numeral 130 or 140 in Fig. 2. Reference numerals 130 and 140 are shown in Fig. 1, but none of the discussion in columns 5-9 of Bell corresponds to Fig. 1...the discussion instead corresponds to Fig. 2.

Bell does not teach or suggest the first agent recited in claim 1. The Office Action alleges that "a first agent configured to generate a first signal, wherein said first signal is indicative, in a first state, that said first agent is available to participate in

subsequent transactions, and wherein said first signal is indicative, in a second state, that said first agent is unavailable to participate in subsequent transactions" is taught in Bell at col. 5, lines 50-62, col. 6, lines 1-67, and col. 7, lines 1-42, stating: "generated 1st requesting signal if it is available to participate begins transaction. Second transaction resending with request out-of-order which implies not available allow for completion or vice versa complete transaction available". Applicants respectfully submit that it is unclear what the above-quoted passage of the Office Action is referring to. However, Applicants submit that nothing in col. 5, lines 50-62, col. 6, lines 1-67, and col. 7 lines 1-42 of Bell teaches or suggests the first agent as recited in claim 1.

Bell col. 5, lines 50-62 merely describes the bus 201 as a pipelined bus, and that "although bus transactions are pipelined, the bus transactions in the present invention do not have to be fully completed in order...the present invention allows for completion request to requests to be out of order" (Bell, col. 5, lines 57-59). Bell col. 6, lines 1-67 describes a deferred reply mechanism whereby a responding agent may delay a data transfer for a first transaction, and may generate a deferred reply (second) transaction at a later time to supply the data:

The present invention accommodates for split transactions by essentially splitting a bus transaction into two independent transactions. The first transaction involves a request for data (or completion signals) by a requesting agent and a response by the responding agent. The request may be comprised of the sending of an address on the address bus and a first token. The response may include the sending of the requested data (or completion signals) if the responding agent is ready to respond. In this case, the bus transaction ends. However, if the responding agent is not ready to supply the request (i.e., the data or completion signals), the response may include the sending of a second token. In this case, the second transaction comprises the resending of the second token with the requested data (or completion signals) by the responding agent to the requesting agent, such that the requesting agent receives the originally requested data to complete the transaction. (Bell, col. 6, lines 1-17)

Thus, the first transaction above is initiated by the request agent without reference to any signals from the responding agent. The responding agent may transmit the data, or may transmit the deferred response. The deferred response is thus an

indication that the responding agent cannot supply data for a currently-ongoing transaction. The responding agent then initiates the second transaction to complete the original transaction. Nothing in these teachings teaches or suggests "a first agent configured to generate a first signal, wherein said first signal is indicative, in a first state, that said first agent is available to participate in subsequent transactions, and wherein said first signal is indicative, in a second state, that said first agent is unavailable to participate in subsequent transactions" as recited in claim 1. Furthermore, Bell teaches:

If the responding agent is not ready to complete the bus transaction, then the responding agent sends a deferred response over the bus at its appropriate response time. The requesting agent receives the deferred response. When the responding agent is ready to complete the deferred bus transaction, the responding agent arbitrates for ownership of the bus. Once bus ownership is obtained, the responding agent sends a deferred reply including a second token on the bus. The requesting agent monitors the bus and receives the second token as part of the deferred reply. In the present invention, the requesting agent latches the second token. The requesting agent then determines whether the second token sent from the responding agent matches the first token. If the requesting agent determines that the second token from the responding agent does not match the first token (which the requesting agent generated), then the data on the bus (or the completion signal) is ignored and the requesting agent continues monitoring the bus. If the requesting agent determines that the second token from the responding agent does match the first token, then the data on the bus (or the completion signals) is the data originally requested by the requesting agent and the requesting agent latches the data on the data bus. (Bell, col. 6, lines 18-40).

The above highlighted teachings of Bell describe the use of a token to link the first transaction and its deferred reply (second) transaction. Again, nothing in these teachings teaches or suggests "a first agent configured to generate a first signal, wherein said first signal is indicative, in a first state, that said first agent is available to participate in subsequent transactions, and wherein said first signal is indicative, in a second state, that said first agent is unavailable to participate in subsequent transactions" as recited in claim 1.

Col. 6, lines 41-67 and Col. 7, lines 1-42 of Bell describes the various phases of a pipelined transaction. Nothing in these teachings teaches or suggests the first agent recited in claim 1, either.

Bell does not teach or suggest the second agent recited in claim 1. The Office Action further alleges that "a second agent coupled to receive said first signal, wherein said second agent is configured to initiate a first transaction for which said first agent is a participant responsive to said first signal being in said first state, and wherein said second agent is configured to initiate a second transaction for which said first agent is a non-participant responsive to said first signal being in said second state" is taught in Bell at col. 8, lines 21-67 and col. 9, lines 1-47, stating: "wherein outbound receive request signal and stored in queue, 2nd transaction resending with request out of order which implies not available allow for completion or vice versa complete transaction available". Applicants respectfully submit that it is unclear what the above-quoted passage of the Office Action is referring to. However, Applicants submit that nothing in col. 8, lines 21-67 and col. 9, lines 1-47 of Bell that teaches or suggests the second agent as recited in claim 1.

Bell teaches: "Bridge 400 also includes outbound request queue 420 which receives requests from processor bus 401 via bus interface 410 and outbound request decoder 415. In one implementation, queue 420 is a conventional first-in-first-out (FIFO) queue. Outbound request decoder 415 determines whether bridge 400 commits to a request (i.e., either defers the request or posts it) and responds to the originating agent on processor bus 401 indicating whether the request was committed. Decoder 415 then places the request into outbound request queue 420. In one embodiment of the present invention, outbound request queue 420 comprises four slots for containing up to four outbound transactions" (Bell, col. 8, lines 21-32). Thus, the bridge 400 accepts a transaction on the bus 401 independent of whether the bridge 400 responds with a deferred reply or not. Bell then issues a corresponding transaction on the I/O bus 402: "Transactions are removed from the top of outbound request queue 420 by I/O bus master control 425 and issued onto I/O bus 402 via I/O bus interface 450. Upon receipt of a reply

from the target agent on I/O bus 402, I/O bus master control 425 returns the reply to bus interface 410 either directly or via inbound request queue 430. If bridge 400 committed the transaction, then the reply is placed into inbound request queue 430. If bridge 400 did not commit the transaction, then the reply is returned directly to interface 410. In one embodiment of the present invention, whether bridge 400 committed to the transaction is contained in the tag field associated with the request in outbound request queue 420. Thus, bus master control 425 determines whether to place the reply in inbound request queue 430 or return it directly to interface 410 based on this tag field." (Bell, col. 8, lines 38-53). Thus, Bell either directly returns data on the bus 401 (if the response was not deferred) or places the data in the inbound request queue (if the response was deferred). Bell continues, teaching: "Inbound request queue 430 transfers requests from I/O bus 402 to processor bus interface 410. These requests originate on I/O bus 402 and are transferred to queue 430 via bus interface 450 and I/O bus target control 445. In one implementation, queue 430 comprises four slots for containing up to four outbound transactions and operates as a conventional FIFO queue. I/O bus target control 445 either places a request in queue 430 or retries the request. If the request is retried, a retry response is issued to the originating agent on I/O bus 402 informing that agent that it must retry the request at a later time... Target control 445 determines whether to retry the request or place it into inbound request queue 430 based on input from inbound queue allocation unit 425 and transaction arbitration unit (TAU) 418. Inbound queue allocation unit 435 monitors the number of slots available in inbound request queue 430. If a slot is available, then target control 445 places the request into queue 430 if TAU 418 issues a grant for the request; if a slot is not available then target control 445 retries the request." (Bell, col. 9, lines 7-17 and 22-30).

Nothing in the above teachings of Bell teaches or suggests: "a second agent coupled to receive said first signal, wherein said second agent is configured to initiate a first transaction for which said first agent is a participant responsive to said first signal being in said first state, and wherein said second agent is configured to initiate a second transaction for which said first agent is a non-participant responsive to said first signal being in said second state" as recited in claim 1.

For at least all of the above stated reasons, Applicants submit that claim 1 is patentable over Bell. Claims 2-17, being dependent from claim 1, are similarly patentable over Bell for at least the above stated reasons. Each of claims 2-17 recites additional combinations of features not taught or suggested in Bell.

Claim 18 recites a combination of features including: "a circuit coupled to said first storage location and coupled to receive a first signal indicative of whether or not a second agent is available to participate in transactions, and wherein said circuit is configured to selectively inhibit initiation of said transaction if said first signal indicates that said second agent is unavailable to participate in transactions, dependent on whether or not said second agent is a participant in said transaction". The Office Action alleges that the above highlighted features are taught in Bell at col. 8, lines 21-53. Applicants respectfully disagree.

Bell teaches: "Bridge 400 also includes outbound request queue 420 which receives requests from processor bus 401 via bus interface 410 and outbound request decoder 415. In one implementation, queue 420 is a conventional first-in-first-out (FIFO) queue. Outbound request decoder 415 determines whether bridge 400 commits to a request (i.e., either defers the request or posts it) and responds to the originating agent on processor bus 401 indicating whether the request was committed. Decoder 415 then places the request into outbound request queue 420. In one embodiment of the present invention, outbound request queue 420 comprises four slots for containing up to four outbound transactions" (Bell, col. 8, lines 21-32). Thus, the bridge 400 accepts a transaction on the bus 401 independent of whether the bridge 400 responds with a deferred reply or not. Bell then issues a corresponding transaction on the I/O bus 402: "Transactions are removed from the top of outbound request queue 420 by I/O bus master control 425 and issued onto I/O bus 402 via I/O bus interface 450. Upon receipt of a reply from the target agent on I/O bus 402, I/O bus master control 425 returns the reply to bus interface 410 either directly or via inbound request queue 430. If bridge 400 committed the transaction, then the reply is placed into inbound request queue 430. If bridge 400 did

not commit the transaction, then the reply is returned directly to interface 410. In one embodiment of the present invention, whether bridge 400 committed to the transaction is contained in the tag field associated with the request in outbound request queue 420. Thus, bus master control 425 determines whether to place the reply in inbound request queue 430 or return it directly to interface 410 based on this tag field." (Bell, col. 8, lines 38-53). Thus, Bell either directly returns data on the bus 401 (if the response was not deferred) or places the data in the inbound request queue (if the response was deferred).

Nothing in the above teachings of Bell teaches or suggests: "a circuit coupled to said first storage location and coupled to receive a first signal indicative of whether or not a second agent is available to participate in transactions, and wherein said circuit is configured to selectively inhibit initiation of said transaction if said first signal indicates that said second agent is unavailable to participate in transactions, dependent on whether or not said second agent is a participant in said transaction". For at least all of the above stated reasons, Applicants submit that claim 18 is patentable over Bell. Claims 19-26, being dependent from claim 18, are similarly patentable over Bell for at least the above stated reasons. Each of claims 19-26 recites additional combinations of features not taught or suggested in Bell.

Claim 27 recites a combination of features including: "receiving a first signal indicative of whether or not a first agent is available to participate in subsequent transactions; and selectively inhibiting initiation of a transaction if said first signal indicates that said first agent is unable to participate in subsequent transactions, dependent on whether or not said first agent is a participant in said transaction". The Office Action relies on the same teachings of Bell as cited above with regard to claim 1 to allegedly teach the above highlighted features of claim 27. Applicants submit that the teachings of Bell, highlighted above with regard to claim 1, do not teach or suggest the above highlighted features of claim 27, either. Furthermore, Applicants submit that the teachings of Bell highlighted above with regard to claim 18 do not teach or suggest the above highlighted features of claim 27.

For at least all of the above stated reasons, Applicants submit that claim 27 is patentable over Bell. Claims 28-36, being dependent from claim 27, are similarly patentable over Bell for at least the above stated reasons. Each of claims 28-36 recites additional combinations of features not taught or suggested in Bell.

Section 112 Rejection

The Office Action rejects claims 27-36 under 35 U.S.C. § 112, second paragraph, alleging that the preamble "A method comprising" renders the claim indefinite because it does not suggest the scope of the claimed invention. Applicants know of no basis for the above allegation of indefiniteness. Applicants are aware of no statute, rule, or case law which requires that a claim preamble suggest the scope of the claimed invention. Rather, it is the body of the claim which defines its scope. The preamble merely identifies the claim as a method claim (as opposed to, e.g., an apparatus claim). Applicants submit that the section 112 rejection is erroneous, and that claims 27-36 meet the requirements of 35 U.S.C. § 112. Thus, Applicants respectfully request removal of the section 112 rejection.

New Claims

Applicants respectfully submit that new claims 37-62 each recite combinations of features not taught or suggested in Bell. For example, claim 37 recites a combination of features including: "a first agent configured to generate a first signal, wherein said first signal is indicative, in a first state, that said first agent is available to participate in subsequent transactions, and wherein said first signal is indicative, in a second state, that said first agent is unavailable to participate in subsequent transactions; and a second agent coupled to receive said first signal, wherein said second agent is configured to initiate a first transaction for which said first agent is a participant responsive to said first signal being in said first state, and wherein said second agent is configured to initiate a second transaction for which said first agent is a non-participant responsive to said first signal being in said second state". Claims 38-53 depend from claim 37, and recite additional combinations of features not taught or suggested in Bell. Claim 54 recites a combination of features including: "a first storage location configured to store a transaction to be initiated by said agent; and a circuit coupled to said first storage location

and coupled to receive a first signal indicative of whether or not a second agent is available to participate in transactions, and wherein said circuit is configured to selectively inhibit initiation of said transaction if said first signal indicates that said second agent is unavailable to participate in transactions, dependent on whether or not said second agent is a participant in said transaction" Claims 55-62 depend from claim 54, and recite additional combinations of features not taught or suggested in Bell.

CONCLUSION

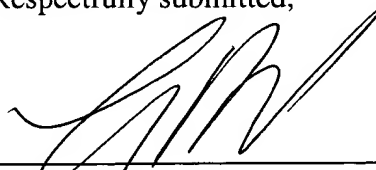
Applicants submit that the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5580-00600/LJM.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☐ Petition for Extension of Time
- ☐ Request for Approval of Drawing Changes
- ☐ Notice of Change of Address
- ☐ Marked-up Copy of Amended Claims
- ☐ Marked-up Copy of Amended Paragraphs
- ☒ Fee Authorization Form authorizing a deposit account debit in the amount of \$636 for fees (\$468 for 26 claims over 20 and \$168 for 2 excess independent claims).
- ☐ Other:

Respectfully submitted,



Lawrence J. Merkel
Reg. No. 41,191
AGENT FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8800

Date: 6/3/03